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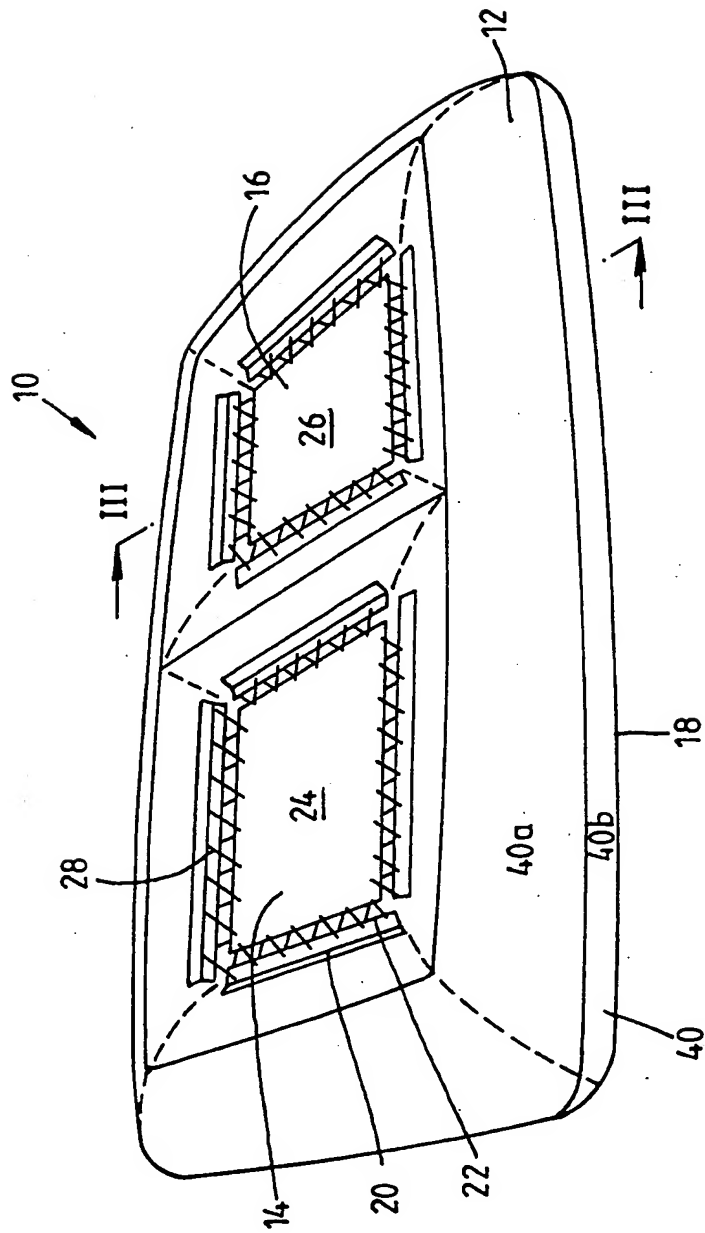


FIG. 2

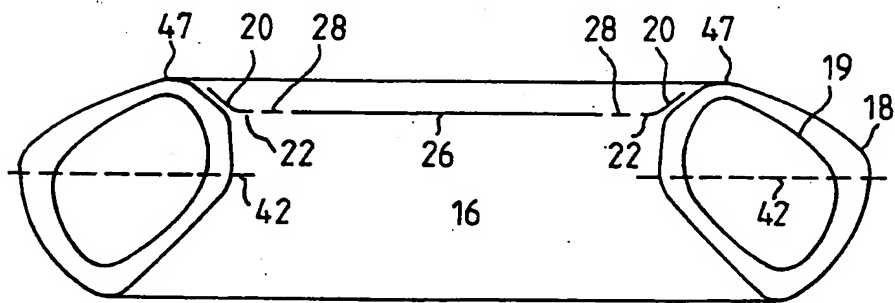
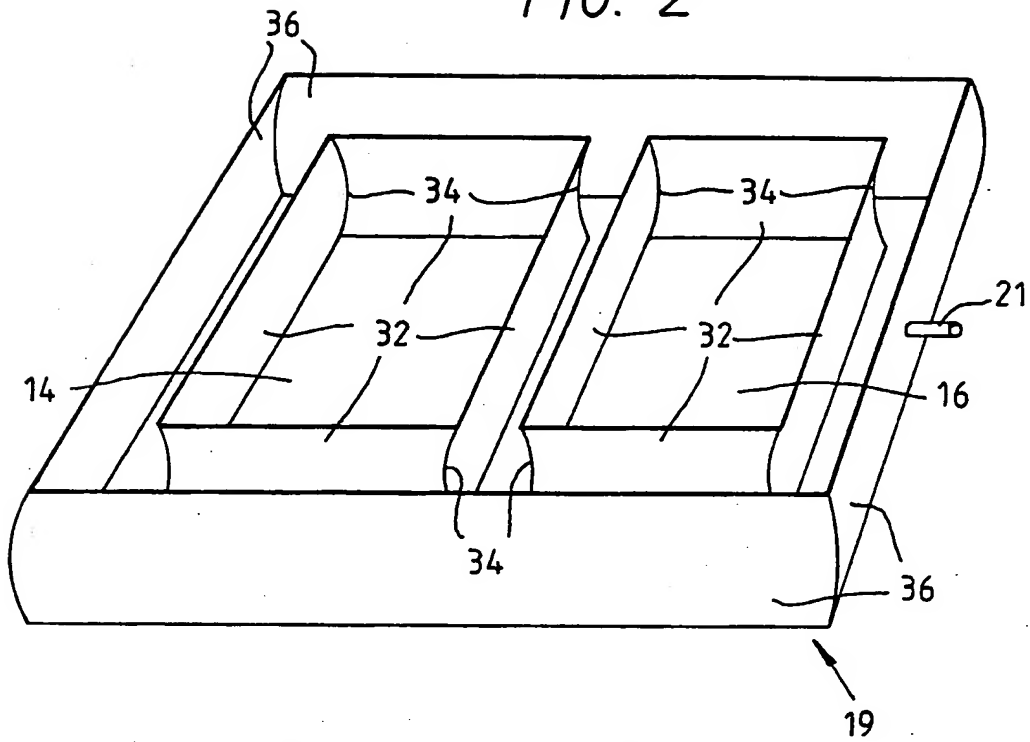


FIG. 3

A TRAMPOLINE

The present invention relates to trampolines.

Trampolines are well-known and popular pieces of sports equipment. However, the trampolines currently in use all have rigid, generally metal, frames which support the trampolining surface and which are raised from the floor by means of legs. Since a fall either upon the metal frame, or off the trampoline altogether, may cause injury, trampolines are generally used only under the supervision of experienced sports staff and they are not thought suitable for use by small children at all.

Air-inflated plastics or rubber skins commonly known as "bouncers" have been created to provide safe resilient surfaces on which children may bounce. However, they do not provide a bounce or spring equivalent to that which may be achieved on a trampoline.

The present invention provides a trampoline which comprises an inflatable frame and a trampolining surface attached thereto, the arrangement being such that when the frame is inflated the trampolining surface is supportable thereby to permit trampoline use. The frame may have an inflatable inner bladder located within an outer skin. The inner bladder may be removably located within the outer skin so that puncture repairs and/or complete replacement of the inner bladder may be carried out. Both the inner bladder and the outer skin may be

made from a series of pieces attached together to create any desired shape of the inflatable frame.

A trampoline according to the present invention may have a frame that provides a plurality of openings in which a plurality of trampolining surfaces are mounted.

The or each trampolining surface may be attached to the inflatable frame by resilient attachment means, such as elasticated cord or springs, both of which may be of conventional type. The attachment may be via attachment elements such as panels which are themselves attached to the frame. The panels may have extensions therefrom which extend in the direction of the extension of trampolining surface, the attachments being engageable with openings in these panel extensions.

The wall of the frame adjacent to the line of attachment of the trampolining surface may be stiffened by incorporation of metal or other rigid rods. The stiffeners (of which there may be four per trampolining surface, forming a square) may provide the attachment elements for the elasticated cord or springs by which the trampoline surface is held under tension.

In order that the present invention may be more clearly understood an embodiment will now be described in more detail and by way of example only with reference to the accompanying drawings in which:

Fig. 1 shows a perspective view of a trampoline

embodying the present invention;

Fig. 2 is a like view in exploded schematic form of the inner bladder; and

Fig. 3 is a schematic vertical section on III - III in Fig. 1.

A trampoline 10 comprises an inflatable frame 12 in the shape of a rectangular figure of eight which defines two spaces 14 and 16 surrounded by the frame 12. The inflatable frame 12 has an outer skin 18 which encloses an inflatable inner bladder 19. The inner bladder has a releaseably sealable inlet/outlet 21 so that it may be inflated by means of an air fan.

The inner bladder is free within the outer skin 18. The outer skin 18 may be secured around the inner bladder by means of closure means suitably located at the base of the trampoline (and therefore not seen in the Figures). The closure means may comprise a series of eyelets arranged at the edges of the outer skin to be closed, closure being achieved by use of lacing to draw the eyelets, and thereby the edges, tightly together.

A series of attachment panels 20 are attached to surfaces of the outer skin 18 which surround the spaces 14 and 16. The panels 20 have extensions 22 which extend freely away from the panels 20. Two trampolining surfaces 24 and 26 are located in the spaces 14 and 16 defined by the rectangular figure of eight shape of the

frame 12. The trampolining surfaces 24 and 26 are secured to the frame 12 by means of elasticated lacing 28 passing sequentially through a series of eyelets arranged around the circumferences of the trampolining surfaces 24 and 26 and similar series of eyelets arranged along the length of the panel extensions 22.

In order to protect people's feet from passing through the laced area between the trampolining surfaces 24, 26 and the inflatable frame 12, covers may be provided which attach e.g. by means of Velcro (Trademark) to the panels 20 and the periphery of the trampolining surfaces 24, 26.

The lacing 28 around the surfaces 24, 26 may be of elasticated cord. The outer skin 18 may be formed from nylon coated PVC whilst the inner bladder may be formed from chemically stabilised PVC. Where either or both of the outer skin 18 and inner bladder are formed from a number of pieces these may be held together with double polyester stitching. The eyelets used for attaching the trampolining surfaces 24, 26 to the frame 12 may be of brass whilst those used for closure of the outer skin 18 at the base of the trampoline may be welded PVC eyelets.

Fig. 2 shows the construction of the inner bladder. Eight panels 32 that are rectangular with concave short sides 34 are connected to form two rectangular walls. Four large panels 36 of similar form are

connected to form an enclosing rectangular wall. Adjacent panels curve so that their edges approach and can be sealed together so that the whole defines a figure of eight. The outer skin 18 may have a similar construction, suitably with at least the outer panels 40 formed of pairs of panels 40a, 40b connected along the equator.

The encasing of the inflated bladder 30 in the relatively robust outer skin 18 gives a good measure of rigidity. In a supporting frame with straight sides (as shown), the greatest risk of buckling is near the centre of a side. To reduce the risk further, the attachment of the surface 24 or 26 (via the lacing 28 and extension 22) is displaced from the equatorial line 42. This can be seen from Fig. 3. For maximum rigidity, the connection would be at the top 47 of the frame. However, we connect some way beneath the top so as to provide a low barrier wall around the trampolining surface.

For increased rigidity, a tubular steel rod may be attached at the line of attachment of the surface 24 26 to the outer skin 18.



CLAIMS

1. A trampoline having a frame which surrounds a space and a trampoline surface; wherein the frame is inflatable and the trampoline surface extends across the space and edges of the trampoline surface are attached to the frame whereby when the frame is inflated, the trampoline surface is supported by the frame to permit trampoline use.
2. A trampoline according to claim 1 wherein the frame is releasably inflatable and comprises an inflatable inner bladder located within an outer skin.
3. A trampoline according to claim 2 wherein the inflatable bladder is removable from the outer skin.
4. A trampoline according to claim 2 or claim 3 wherein the outer skin and/or inflatable inner bladder comprise(s) one or more panels.
5. A trampoline according to any one of the preceding claims wherein the trampoline surface is attached to the frame by resilient attachment means.
6. A trampoline according to claim 5 wherein the resilient attachment means attach the trampoline surface to the frame via attachment elements.
7. A trampoline according to claim 5 or claim 6 wherein the resilient attachment means comprises elasticated cord or springs.
8. A trampoline according to claim 6 wherein the

attachment elements comprise attachment panels mounted on the frame which are extendable towards the trampoline surface and wherein the resilient attachment means are engageable with openings in the panel extensions.

5        9. A trampoline according to any one of the preceding claims wherein the frame is stiffened by the incorporation of one or more substantially rigid stiffeners.

10       10. A trampoline according to claim 6 wherein the attachment elements are provided by substantially rigid rods.

11. A trampoline according to any one of the preceding claims wherein the trampoline surface is removable from said frame.

15       12. A trampoline according to any one of the preceding claims which comprises two or more trampoline surfaces in respective spaces delineated by the frame.

13. A trampoline substantially as described herein with reference to Figs. 1 and 2.

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